What is claimed is:

1. A receiver for providing each of a plurality of antennas with a receive weight, thereby controlling receive directivity of the antennas as a whole, and receiving a signal transmitted from a mobile station device serving as an opposite party of communication, said receiver comprising:

means for detecting an arrival direction and/or power of a signal from a mobile station device; and

means for calculating a solution of a receive weight control method as receive weights of respective antennas, based on a result of the detection, under such a condition that a received quality of a signal transmitted from a mobile station device serving as an opposite party of communication becomes favorable, and receiving the signal by using the calculated receive weights.

2. A transceiver for receiving a signal transmitted from a mobile station device by using a plurality of antennas, providing each of the antennas with a transmit weight, thereby controlling transmit directivity of the antennas as a whole, and transmitting a signal to a mobile station device serving as an opposite party of communication, said transceiver comprising:

means for detecting an arrival direction and/or power of a signal from a mobile station device; and

means for calculating a solution of a transmit weight

control method as transmit weights of respective antennas, based on a result of the detection, under such a condition as to make favorable a quality of a signal received at a mobile station device serving as an opposite party of communication, and transmitting the signal by using the calculated transmit weights.

3. A transceiver according to claim 2, comprising:

means for detecting compensation unnecessitating signals to be removed from subjects of transmit weight control, based on a preset condition; and

means for removing the detected compensation unnecessitating signals from subjects of transmit weight control and calculating transmit weights of respective antennas, and transmitting the signal to a mobile station device serving as an opposite party of communication by using the calculated transmit weights.

4. A transceiver according to claim 2, comprising:

means for correcting a detection result of the arrival direction and/or a detection result of the power so as to compensate a difference between a reception situation of a signal from a mobile station device and a transmission situation of a signal to the mobile station device; and

means for calculating the transmit weights according to the transmit weight control method, by using a result of the correction, and transmitting the signal to the mobile station

device serving as an opposite party of communication, by using the calculated transmit weights.

5. A transceiver according to claim 3, comprising:

means for correcting a detection result of the arrival direction and/or a detection result of the power so as to compensate a difference between a reception situation of a signal from a mobile station device and a transmission situation of a signal to the mobile station device; and

means for calculating the transmit weights according to the transmit weight control method, by using a result of the correction, and transmitting the signal to the mobile station device serving as an opposite party of communication, by using the calculated transmit weights.

6. A receiver according to claim 1, comprising:

arrival direction detection means for detecting an arrival direction of a signal from a mobile station device serving as an opposite party of communication; and

reception means for calculating a solution of a co-phase equal amplitude excitation method as receive weights of respective antennas, based on the detected arrival direction, under such a condition that a receive power level of a signal transmitted from a mobile station device serving as an opposite party of communication becomes large, and receiving the signal by using the calculated receive weights.

7. A receiver according to claim 1, comprising:

arrival direction detection means for detecting an arrival direction of a signal from a mobile station device;

power detection means for detecting power of the signal from the mobile station device; and

reception means for calculating a solution of an SINR reference method as receive weights of respective antennas, based on the detected arrival direction and detected power, under such a condition that an SINR of a signal transmitted from a mobile station device serving as an opposite party of communication becomes large, and receiving the signal by using the calculated receive weights.

8. A receiver according to claim 1, comprising:

arrival direction detection means for detecting an arrival direction of a signal from a mobile station device;

power detection means for detecting power of the signal from the mobile station device; and

reception means for selecting a receive weight control method based on the detected arrival direction and detected power, calculating receive weights of respective antennas by using the selected receive weight control method so that a received quality of a signal from a mobile station device serving as an opposite party of communication may become better, and receiving the signal by using the calculated receive weights.

9. A transceiver according to claim 2, comprising:

arrival direction detection means for detecting an arrival direction of a signal from a mobile station device serving as an opposite party of communication; and

transmission means for calculating a solution of a co-phase equal amplitude excitation method as transmit weights of respective antennas, based on the detected arrival direction, under such a condition that a transmit level of a signal to a mobile station device serving as an opposite party of communication becomes large, and transmitting the signal by using the calculated transmit weights.

10. A transceiver according to claim 2, comprising:

arrival direction detection means for detecting an arrival direction of a signal from a mobile station device;

power detection means for detecting power of the signal from the mobile station device; and

transmission means for calculating a solution of an SINR reference method as transmit weights of respective antennas, based on the detected arrival direction and detected power, under such a condition that an SINR of a signal to be transmitted to a mobile station device serving as an opposite party of communication becomes large, and transmitting the signal by using the calculated transmit weights.

11. A transceiver according to claim 2, comprising:

arrival direction detection means for detecting an

arrival direction of a signal from a mobile station device;

power detection means for detecting power of the signal from the mobile station device; and

transmission means for selecting a transmit weight control method based on the detected arrival direction and detected power, calculating transmit weights of respective antennas by using the selected transmit weight control method so that a quality of a signal received at a mobile station device serving as an opposite party of communication may become better, and transmitting the signal by using the calculated transmit weights.

12. A receiver according to claim 1,

wherein said receiver is disposed in a base station device of a mobile radio communication system, and

wherein said receiver comprises:

a plurality of antennas for receiving a signal radio-transmitted from a mobile station device;

as many RF receivers as the antennas, each of the RF receivers converting a frequency band of a signal received by each of antennas from a radio frequency band to a baseband;

an arrival direction estimation and power average measurement section for detecting an arrival direction of a signal arriving from each mobile station device by estimation and/or detecting an average power of a signal arriving from each mobile station device, based on a signal supplied from each of the RF receivers;

a weight control section for calculating a solution of a predetermined receive weight control method as receive weights of respective antennas, by using a result of detection conducted by the arrival direction estimation and power average measurement section, as a parameter;

as many multipliers as antennas, each of the multipliers multiplying the signal from each of the RF receivers by a receive weight of each of the antennas supplied from the weight control section; and

an adder for summing results of multiplying conducted by the multipliers, and outputting a result of the summing as a result of reception of a signal from a mobile station device serving as an opposite party of communication.

13. A transceiver according to claim 2,

wherein said transceiver is disposed in a base station device of a mobile radio communication system, and

wherein said transceiver comprises:

a plurality of antennas for receiving a signal radio-transmitted from a mobile station device, and radio-transmitting a signal to be transmitted, to a mobile station device;

as many duplexers as antennas, each of the duplexers having a function of separating a transmission signal and a reception signal, and allowing the same antenna to be used for both transmission and reception;

as many RF receivers as the antennas, each of the RF

receivers converting a frequency band of a signal received by each of the antennas from a radio frequency band to a baseband;

an arrival direction estimation and power average measurement section for detecting an arrival direction of a signal arriving from each mobile station device by estimation and/or detecting an average power of a signal arriving from each mobile station device, based on a signal supplied from each of the RF receivers;

a weight control section for calculating a solution of a predetermined transmit weight control method as transmit weights of respective antennas, by using a result of detection conducted by the arrival direction estimation and power average measurement section, as a parameter;

a weight calibration section for conducting predetermined calibration processing on the transmit weights of respective antennas supplied from the weight control section;

as many multipliers as antennas, each of the multipliers multiplying a signal for a mobile station device serving as an opposite party of communication by the transmit weights of respective antennas calibrated by the weight calibration section; and

as many RF transmitters as antennas, each of the RF transmitters converting a frequency band of a multiplying result signal obtained by each of the multipliers from a baseband to a radio frequency band, and radio-transmitting the converted signal from each of the antennas.

14. A transceiver according to claim 13, wherein said transceiver comprises a compensation unnecessitating signal decision section for detecting signals to be removed from subjects of transmit weight control, from among signals from a mobile station device, as a compensation unnecessitating signal, and notifying a result of detection conducted by the arrival direction estimation and power measurement section, with regard to signals other than the detected compensation unnecessitating signals, to the weight control section, and

the weight control section calculates a solution of a predetermined transmit weight control method by using a detection result notified by the compensation unnecessitating signal decision section, as a parameter, and thereby removes the compensation unnecessitating signals detected by the compensation unnecessitating signal decision section from subjects of transmit weight control.

15. A receiver according to claim 1,

wherein said receiver is disposed in a relay amplifying device of a mobile radio communication system, and

wherein said receiver comprises:

a plurality of antennas for receiving a signal radio-transmitted from a mobile station device;

as many RF receivers as the antennas, each of the RF receivers converting a frequency band of a signal received by

each of antennas from a radio frequency band to a baseband;

an arrival direction estimation and power average measurement section for detecting an arrival direction of a signal arriving from each mobile station device by estimation and/or detecting an average power of a signal arriving from each mobile station device, based on a signal supplied from each of the RF receivers;

a weight control section for calculating a solution of a predetermined receive weight control method as receive weights of respective antennas, by using a result of detection conducted by the arrival direction estimation and power average measurement section, as a parameter;

as many multipliers as antennas, each of the multipliers multiplying the signal from each of the RF receivers by a receive weight of each of the antennas supplied from the weight control section; and

an adder for summing results of multiplying conducted by the multipliers, and outputting a result of the summing as a result of reception of a signal from a mobile station device serving as an opposite party of communication.

16. A transceiver according to claim 2,

wherein said transceiver is disposed in a relay amplifying device of a mobile radio communication system, and

wherein said transceiver comprises:

a plurality of antennas for receiving a signal radio-transmitted from a mobile station device, and radio-

transmitting a signal to be transmitted, to a mobile station device;

as many duplexers as antennas, each of the duplexers having a function of separating a transmission signal and a reception signal, and allowing the same antenna to be used for both transmission and reception;

as many RF receivers as the antennas, each of the RF receivers converting a frequency band of a signal received by each of the antennas from a radio frequency band to a baseband;

an arrival direction estimation and power average measurement section for detecting an arrival direction of a signal arriving from each mobile station device by estimation and/or detecting an average power of a signal arriving from each mobile station device, based on a signal supplied from each of the RF receivers;

a weight control section for calculating a solution of a predetermined transmit weight control method as transmit weights of respective antennas, by using a result of detection conducted by the arrival direction estimation and power average measurement section, as a parameter;

a weight calibration section for conducting predetermined calibration processing on the transmit weights of respective antennas supplied from the weight control section;

as many multipliers as antennas, each of the multipliers multiplying a signal for a mobile station device serving as an opposite party of communication by the transmit weights of

respective antennas calibrated by the weight calibration section; and

as many RF transmitters as antennas, each of the RF transmitters converting a frequency band of a multiplying result signal obtained by each of the multipliers from a baseband to a radio frequency band, and radio-transmitting the converted signal from each of the antennas.

17. A transceiver according to claim 16, wherein

said transceiver comprises a compensation unnecessitating signal decision section for detecting signals to be removed from subjects of transmit weight control, from among signals from a mobile station device, as compensation unnecessitating signals, and notifying a result of detection conducted by the arrival direction estimation and power measurement section, with regard to signals other than the detected compensation unnecessitating signals, to the weight control section, and

the weight control section calculates a solution of a predetermined transmit weight control method by using a detection result notified by the compensation unnecessitating signal decision section, as a parameter, and thereby removes the compensation unnecessitating signals detected by the compensation unnecessitating signal decision section from subjects of transmit weight control.